REMARKS

The Office Action dated October 30, 2006 has been received and carefully noted. The following remarks are submitted as a full and complete response thereto. Claims 1-17 are currently pending in the application and are respectfully submitted for consideration.

Claims 1-5, 8-12, and 15-17 were rejected under 35 U.S.C. §102(b) as being anticipated by Pehlke (U.S. Patent Pub. No. 2002/0136325). The rejection is respectfully traversed for the reasons which follow.

Claim 1, upon which claims 2-7 are dependent, recites a method which includes receiving an instruction to adjust the output power of power amplifier, powering on or off at least one branch of the power amplifier according to the received instruction to enable a logarithmic change in output power of the amplifier, and amplifying a signal according to the adjusted output power.

Claim 8 recites a system including means for receiving an instruction to adjust the output power of power amplifier, means for powering on or off at least one branch of the power amplifier according to the received instruction to enable a logarithmic change in output power, and means for amplifying a signal according to the adjusted output power.

Claim 9, upon which claims 10-14 are dependent, recites a system including a receiving engine capable of receiving an instruction to adjust the output power of power amplifier, and a determining engine, communicatively coupled to the receiving engine,

capable of determining how many branches of a power amplifier to power on or off according to the received instruction to enable a logarithmic change in output power. The system also includes a power amplifier engine, communicatively coupled to the determining engine and the power amplifier, capable of transmitting the determination to the power amplifier.

Claim 15, upon which claims 16 and 17 are dependent, is directed to a power amplifier. The power amplifier includes a plurality of branches for controlling transistors, and a plurality of transistors, each transistor being communicatively coupled to a branch of the plurality of branches. The transistors are arranged in a logarithmic scale, thereby enabling a logarithmic change in output power with the powering on or off of a transistor.

According to certain embodiments of the invention, therefore, a system and method are provided that enable power control capability in a linear power amplifier from a maximum output power to a minimum output power in linear steps of 2dBm there between. Accordingly, power amplifier output power can be adjusted linearly in dB according to power needs, thereby reducing overall power consumption.

As will be discussed below, Pehlke fails to disclose or suggest all of the elements of the claims, and therefore fails to provide the advantages and features discussed above.

Pehlke discloses a branched power amplifier circuit that includes two or more amplifier segments or branches, each with a corresponding lossy modulator. The branched power amplifier may be dynamically resized by enabling different ones of its

branches, to deliver peak efficiency at a number of different amplifier output power levels. Each amplifier branch operates in a saturated mode and selectively amplifies an RF input signal. The lossy modulators provide either supply voltage or supply current modulation to corresponding amplifier branches, thus imparting highly linear amplitude modulation to the overall output signal generated by branched power amplifier, despite its saturated mode operation.

Applicants respectfully submit that Pehlke fails to disclose or suggest all of the elements of the present claims. For example, Pehlke does not disclose or suggest "receiving an instruction to adjust the output power of power amplifier," "powering on or off at least one branch of the power amplifier according to the received instruction," or "amplifying a signal according to the adjusted output power," as recited in claim 1, and similarly recited in claims 8 and 9.

Pehlke only discloses a composite amplifier having an effective power amplifier device size that depends on which branches 14 are enabled. By selecting the appropriate branch 14, or combinations of branches 14, the effective size of the branched power amplifier 12 may be adjusted as output signal power requirements change (Pehlke, paragraph 0051). Pehlke further discloses that lossy modulators provide either supply voltage or supply current modulation to corresponding amplifier branches. To enable the corresponding lossy modulator 34, the involved switch 32 couples the lossy modulator 34 to the amplitude information signal AM.sub.IN. When connected to AM.sub.IN, the lossy modulator 34 powers the corresponding branch 14 in the branched power amplifier 12.

To disable the corresponding lossy modulator 34, the involved switch 32 couples the lossy modulator 34 to a disable signal, which may, for instance, simply be a static voltage level that shuts off the lossy modulator 34. Disabling a given lossy modulator 34 also disables the corresponding branch 14 in the branched power amplifier 12 by removing power from that branch 14.

Pehlke, however, does not disclose receiving an instruction to adjust the output power of the power amplifier, powering on or off a branch of the power amplifier according to the received instruction, and amplifying the signal according to the adjusted output power. In fact, Pehlke makes no mention of receiving any type of instruction.

According to embodiments of the present invention, on the other hand, a power amplifier control system 285 controls the power amplifier 280 output power based on instructions received from a base station, other wireless node, or other source. For example, if a wireless device incorporating the transmitter section 200 is near a base station (e.g., BS 12), the base station can instruct the power amplifier control system 285 to decrease the output power on the power amplifier 280, thereby reducing power consumption and reducing interference in any other nearby wireless devices. The power amplifier control system 285 will then instruct the power amplifier 280 to turn off one or more branches to decrease output power. However, if the wireless device incorporating the transmitter section 200 is far away from a base station, the base station can instruct the power amplifier control system 285 to increase the output power of the power amplifier 280 (Specification, paragraph 0028).

Pehlke does not disclose or suggest receiving instructions to adjust the output power and, therefore, fails to disclose or suggest "receiving an instruction to adjust the output power of power amplifier," "powering on or off at least one branch of the power amplifier according to the received instruction," or "amplifying a signal according to the adjusted output power," as recited in claim 1, and similarly recited in claims 8 and 9. Consequently, Applicants respectfully request that the rejection of claims 1, 8, and 9 be withdrawn.

Claims 2-7 and 10-14 are dependent upon claims 1 and 9, respectively. Thus, claims 2-7 and 10-14 should be allowed for at least their dependence upon claims 1 and 9, and for the specific limitations recited therein.

With respect to claim 15, Applicants respectfully submit that Pehlke fails to disclose or suggest "wherein the transistors are arranged in a logarithmic scale, thereby enabling a logarithmic change in output power with the powering on or off of a transistor." As illustrated in Fig. 3B, which is a block diagram, the embodiments of the present invention provides the power amplifier 280 as part of the transmitter section 200 (FIG. 2). Each input (In) of the section 280a is communicatively coupled to a transistor of the transistors 280b, which vary in size to enable linear in dB steps in adjust output power levels of the amplifier 280 as shown in Table II of the present specification, where transistors are arranged in a logarithmic scale (See Specification, paragraph 0032).

Applicants respectfully submit that Pehlke fails to disclose or suggest that the transistors are arranged in a logarithmic scale. Rather, Pehlke merely discloses that the

"lossy modulator 34 includes a control circuit 60, which typically comprises an operational amplifier 64, a current sense resistor 66, a control current source 68, and a signal resistor 70. The lossy modulator 34 further includes the pass transistor 52" (Pehlke, paragraph 0041). Therefore, Pehlke does not disclose or suggest "wherein the transistors are arranged in a logarithmic scale, thereby enabling a logarithmic change in output power with the powering on or off of a transistor," as recited in claim 15. As such, Applicants respectfully request that the rejection of claim 15 be withdrawn.

Claims 16 and 17 are dependent upon claim 15. Therefore, claims 16 and 17 should be allowed for at least their dependence upon claim 15, and for the specific limitations recited therein.

Claims 6-7 and 13-14 were rejected under 35 U.S.C. §103(a) as being unpatentable over Pehlke in view of Eidson (U.S. Patent No. 6,255,906). The rejection is respectfully traversed for the reasons which follow.

Pehlke is discussed above. Eidson discloses a power amplifier operated as an envelope digital to analog converter with digital predistortion. In order to reproduce a particular envelope profile, a selected number of the power amplifiers of the power amplifier array is switched on, whereas another selected number of the power amplifiers of the power amplifier array are switched off. All elements are fed with an RF signal containing phase information as well. The amplified, output signal provided after the power amplifier array is fed to an antenna for signal transmission. Impedance matching circuitry is employed between the power amplifier array and the antenna to provide

efficiency for those applications having low power budgets or seeking to operate with extremely high efficiency.

Claims 6-7 and 13-14 are dependent upon claims 1 and 9, respectively. In addition, as discussed above, Pehlke fails to disclose or suggest all of the elements of claims 1 and 9. Furthermore, Eidson fails to cure these deficiencies in Pehlke as Eidson also fails to disclose or suggest "receiving an instruction to adjust the output power of power amplifier," "powering on or off at least one branch of the power amplifier according to the received instruction," or "amplifying a signal according to the adjusted output power." Accordingly, the combination of Pehlke and Eidson fails to disclose or suggest all of the elements of claims 6-7 and 13-14. Additionally, claims 6-7 and 13-14 should be allowed for at least their dependence upon claims 1 and 9, and for the specific limitations recited therein.

Applicants respectfully submit that the cited prior art fails to disclose or suggest all of the elements of the claimed invention. These distinctions are more than sufficient to render the claimed invention unanticipated and unobvious. It is therefore respectfully requested that all of claims 1-17 be allowed, and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,

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